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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,636	02/28/2002	Yan Yan Tang	5181-85000	5406

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EXAMINER	
CHEN, PO WEI	
ART UNIT	**PAPER NUMBER**
2676	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/085,636	Applicant(s) TANG ET AL.	
	Examiner Po-Wei (Dennis) Chen	Art Unit 2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

In response to an Amendment received on April 8, 2004. This action is final.

Claims 1-16 are pending in this application. Claims 1, 9 and 16 are independent claims.

The present title of the invention is "Multiple Scan Line Sample".

The Group Art Unit of the Examiner case is now 2676. Please use the proper Art Unit number to help us serve you better.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 7-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cosman et al. (US 5,943,060; refer to as Cosman herein).

3. Regarding claim 1, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

A method for generating pixels for a display device (lines 1-12 of abstract);

Storing a plurality of samples in a memory (lines 40-43 of column 3 and Fig. 1; the polygons correspond to samples);

Reading a first portion of samples from the memory, wherein the first portion of samples corresponds to pixels in at least two neighboring scan lines (lines 27-33 of column 4 and Fig. 3; set of polygons (portion of samples) that influence the pixel are being retrieved from memory; while claim recites the portion of samples corresponds to pixels in at least two neighboring scan

lines, it is noted that polygons contains data of pixels that are in multiple neighboring scan lines. In Fig. 3, it is clear that polygons 44a and 46b will correspond to multiple scan lines of pixels);

Filtering a first subset of the first portion of samples to generate a first pixel in a first scan line; Filtering a second subset of the first portion of samples to generate a second pixel in a second scan line, wherein the second scan line neighbors the first scan line (lines 34-43 of column 4, lines 36-50 of column 5, lines 53-67 of column 6 and lines 1-10 of column 7 and Fig. 3 and 6; different pixels have different subsets of polygons to be used to generate pixel data. And in the case where the pixels have same polygon(s) as in the case of Fig. 3, the set of polygons being used will have all the subsets of polygons for each pixel; while claim recites first pixel in a first scan line and second pixel in a second scan line, it is noted the pixels disclosed by Cosman are arranged in rows and columns of scan lines on display, thus the teaching of using subset of polygons to generate pixel data is also being applied to every pixel of first and second scan lines. Also see lines 24-41 of column 1 and lines 24-39 of column 7).

4. Regarding claim 2, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

The first subset of the first portion of samples includes a plurality of common samples with the second subset of the first portion of samples (lines 34-43 of column 4 and Fig. 3 and 6; a pixel's subset of polygons can contain the same polygon data of a different subset of polygons if the polygon data influence both pixels. Thus, the portion of samples correspond to the set of polygons that has both subsets of polygons).

5. Regarding claim 3, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

Storing the first portion of samples in a cache memory after said reading; wherein said filtering the first subset comprises accessing the first subset of the first portion of samples from the cache memory; wherein said filtering the second subset comprises accessing the second subset of the first portion of samples from the cache memory (lines 55-67 of column 3 and lines 1-35 of column 5 and Fig. 1-3; the polygons are stored in memory after being used to computed pixels values and different set and subset of polygons are being retrieved from memory depending on the pixels).

6. Regarding claim 7, statements presented above, with respect to claim 2 are incorporated herein. Depending on the pixels being processed, different sets (portions) of polygons are retrieved from the memory. And in the cases where pixels have same polygon(s), pixels will have common polygons within their subsets of polygons.

7. Regarding claim 8, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

Performing said reading, and said steps of filtering a plurality of times to generate all pixels in the first and second scan lines (Fig. 6 and 9A-B; while claim recites first and second scan lines, it is noted that the pixels disclosed by Cosman are refer to every pixel of the display which arrange pixels in columns and rows of scan lines. Also see lines 24-41 of column 1 and lines 24-39 of column 7).

8. Regarding claims 9 and 11-13, statements presented above, with respect to claim 1 are incorporated herein. It is noted that polygons are shared by pixels. Thus, a set of polygons (first portion of samples) will be able to generate a plurality of pixels (Fig. 3). Furthermore, the number of scan lines of pixels correspond to the samples depending on the number of scan lines

shared by the polygon. While Cosman does not specify the number of scan lines correspond to the set of polygons, it is clear that a polygon can comprise samples for multiple scan lines of pixels (polygon 46a of Fig. 3).

9. Regarding claim 10, statements presented above, with respect to claim 2 are incorporated herein.

10. Regarding claims 14-15, statements presented above, with respect to claims 1 and 3 are incorporated herein.

11. Regarding claim 16, statements presented above, with respect to claim 1 are incorporated herein. Furthermore, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

A memory (element 22 of Fig. 1);

A filter unit (element 24 of Fig. 1);

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman et al. (US 5,943,060; refer to as Cosman herein).

14. Regarding claim 4, as statements presented above, with respect to claim 1 are incorporated herein. Different pixels have different subsets of polygons to be used to generate pixel data. Thus, third pixel has third subset of polygons and forth pixel has fourth subset of

polygons. And in the case where the pixels have same polygon(s) as in the case of Fig. 3, the set of polygons being used will have all the subsets of polygons for each pixel; while claim recites third pixel neighbors the first pixel in the first scan line and fourth pixel neighbors the second pixel in the second scan line, it is noted the pixels disclosed by Cosman are arranged in rows and columns of scan lines on display, thus the teaching of using subset of polygons to generate pixel data is also being applied to every pixel of first and second scan lines. Also see lines 24-41 of column 1 and lines 24-39 of column 7. Although Cosman does not specifically use first 4 pixels of the first and second scan lines as example, it is clear that the grouping of the pixels depending on the subset of polygons they share, and this varies with the applications being applied or used with. In Fig. 3, pixel 48a and 48b clearly shares at least one polygon (46a) and thus the set of polygons will have both subsets of pixel 48a and 48b. And it is clear that polygon 46a correspond to multiple scan lines of pixels. Thus, the pixels of those scan lines will share the sampling of polygon 46a. While Cosman does not specify that the pixels are first pixel and third pixel of the first scan line and second pixel and fourth pixel of the second scan line, it would have been obvious to one of ordinary skill in the art to modify Cosman to change the location of the pixels in the example and the teaching of utilizing shared sampling by both pixels will still applied.

15. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman et al. (US 5,943,060; refer to as Cosman herein) as applied to claim 1 above, and further in view of Snyder et al. (US 6,326,964; refer to as Snyder herein).

16. Regarding claim 5, Cosman discloses a computer graphic system with adaptive pixel multisampler comprising:

Reading a second portion of samples from the memory, wherein the second portion of samples corresponds to pixels in the at least two neighboring scan lines (lines 38-67 of column 3 and Fig. 6 and 9A-B; while claim recites second portion, it is noted that depending on the pixels being processed, different set of polygons will be retrieved from memory. Also, polygons contains data of pixels that are in multiple neighboring scan lines);

Filtering a first subset of the second portion of samples to generate a third pixel in the first scan line; filtering a second subset of the second portion of samples to generate a fourth pixel in the second scan line (lines 34-43 of column 4, lines 36-50 of column 5, lines 53-67 of column 6 and lines 1-10 of column 7 and Fig. 3 and 6; different pixels have different subsets of polygons to be used to generate pixel data. And in the case where the pixels have same polygon(s) as in the case of Fig. 3, the set of polygons being used will have all the subsets of polygons for each pixel; while claim recites third pixel in a first scan line and fourth pixel in second scan line, it is noted the pixels disclosed by Cosman are arranged in rows and columns of scan lines on display; thus the teaching of using subset of polygons to generate pixel data is also being applied to every pixel of first and second scan lines. Also see lines 24-41 of column 1 and lines 24-39 of column 7).

Cosman does not disclose the wherein the second portion of samples neighbors the first portion of samples. Snyder discloses a method of processing image chunks utilizing the method (lines 1-18 of column 32 and Fig. 14A-C; different neighboring image samples chunks correspond to different portions of samples). It would have been obvious to one of ordinary skill in the art to utilize the teaching of Snyder to provide high-quality images at a lower cost for real-

time image application by using image chunks rendering (lines 53-55 of column 5 and lines 4-8 of column 6, Snyder).

17. Regarding claim 6, statements presented above, with respect to claim 4 are incorporated herein.

Response to Arguments

18. Applicant's arguments filed April 8, 2004 have been fully considered but they are not persuasive.

The Applicant argues reference Cosman does not teach or suggest storing a plurality of (rendered) samples in a memory, which that sample data rendered for a specific subpixel location is not stored in the frame buffer and polygon data corresponds to a region or area, not a specific point on an object or image. However, claim broadly recites storing plurality samples in a memory and does not specify samples as being rendered. Samples can be defined as broad as any pixel or subpixel data. Cosman disclose storing polygons in a memory (lines 40-43 of column 3 and Fig. 1) where polygons includes information such as color and opacity data values corresponds to the pixel or subpixel influenced. Also see lines 45-54 of column 3 and lines 26-35 of column 5.

The Applicant argues reference Cosman does not teach or suggest reading a first portion of samples from the memory, where the first portion of samples corresponds to pixels in at least two neightboring scan lines. However, this is known in the art taught by Cosman (lines 27-33 of column 4 and Fig. 3; set of polygons (portion of samples) that influence the pixel are being retrieved from memory; while claim recites the portion of samples corresponds to pixels in at least two neighboring scan lines, it is noted that polygons contains data of pixels that are in

multiple neighboring scan lines. In Fig. 3, it is clear that polygons 44a and 46b will correspond to multiple scan lines of pixels). Furthermore, in Fig. 7 and 8, it is also clear that a polygon will consist multiple neighboring scan lines of pixels.

The Applicant argues reference Cosman does not teach or suggest using samples from a single read operation to perform "filtering a first subset of the first portion of samples to generate a first pixel in a first scan line; filtering a second subset of the first portion of samples to generate a second pixel in a second scan line, wherein the second scan line neighbors the first scan line". However, claim does not recite limitation of single read operation.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

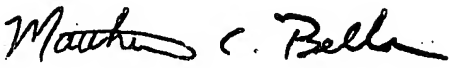
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Po-Wei (Dennis) Chen whose telephone number is (703) 305-8365. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Po-Wei (Dennis) Chen
Examiner
Art Unit 2676

Po-Wei (Dennis) Chen
June 1, 2004



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